

We claim:

1. A Schottky diode, comprising:

a semiconductor body having a top side;

a weakly-conductive doped well formed in said semiconductor body;

a metallic layer on said well for forming a Schottky junction with lateral edges, said lateral edges being at least one of longer than a straight edge, curved, ramified, and rimose; said metallic layer being at least one layer selected from the group of thin layers consisting of:

a liner of a contact hole filling extending in a dielectric layer covering said top side,

a metal silicide layer, and

a liner on said metal silicide layer; and

a contact region being highly doped for a low-impedance contact connection and having a lateral boundary in said doped well and one of a lattice-shaped structure, a finger-shaped

structure, a comb-shaped structure, an irregularly curved edge, a ramified edge, and a rimose edge.

2. The Schottky diode according to claim 1, wherein said lateral edges of said Schottky junction and said lateral boundary of said highly doped contact region facing said Schottky junction have a constant distance therebetween.

3. The Schottky diode according to claim 1, wherein said doped well is selected from the group consisting of a high-voltage n-type well and a high-voltage p-type well of a CMOS technology.

4. The Schottky diode according to claim 1, further comprising:

a further doped well containing said doped well and being doped for an opposite sign of electrical conductivity than said doped well; and

a further highly doped contact region provided on said further doped well and having the same sign of conductivity as said further doped well.

5. The Schottky diode according to claim 1, wherein said metal silicide layer has a finger-shaped structure.

6. The Schottky diode according to claim 5, wherein said contact region is finger-shaped and is intermeshed in a comb-shaped manner with the metal silicide layer.

7. A Schottky diode, comprising:

a semiconductor body having a top side;

a dielectric layer covering said top side and having a contact hole formed therein;

a contact hole filling disposed in said contact hole;

a weakly-conductively doped well formed in said semiconductor body;

a metallic layer on said well for forming a Schottky junction with lateral edges, said lateral edges being at least one of longer than a straight edge, curved, ramified, and rimose, said metallic layer being selected from the group of layers consisting of:

a liner of said contact hole filling,

a metal silicide layer, and

a liner on said metal silicide layer; and

a contact region being highly doped for a low-impedance contact connection and having a lateral boundary in said doped well and one of a lattice-shaped structure, a finger-shaped structure, a comb-like structure, an irregularly curved edge, a ramified edge, and a rimose edge.